THE TYPE LOCALITY AND HABITAT OF HYDROPORUS DIXIANUS FALL (COLEOPTERA: DYTISCIDAE)[1]

By Frank N. Young

Hydroporus dixianus was described by H. C. Fall (1917) from a series of six specimens collected by Dr. J. Chester Bradley in Spring Creek, Decatur County, Georgia, in August 1913. This distinctive little species has remained very rare in collections, and practically nothing is known about its biology or distribution. The only additional published record since the original description seems to be that for Torreya State Park, Liberty County, Florida (Young, 1954).

In reply to a query as to the exact place at which the types of *Hydroporus dixianus* were collected, Dr. Bradley replied as follows: "In August 1913 we spent some days in camp on the banks of Spring Creek at a place that must have been where, or approximately where Georgia State Highway No. 253 crosses Spring Creek. The environs have been so changed that I cannot be exactly sure. . . . We camped at the crossing of a piney-woods road by means of a cable-ferry across the creek; there were no houses there, but a small frame shelter had been erected for hunting purposes at the spot, and we camped in it. The name Reynoldsville, shown on current Rand McNally Road map sounds familiar, and was I think the name of a turpentine still located perhaps a mile west of the ferry by which we camped."

The above leaves little doubt that Spring Creek below the Georgia Power and Light Company dam at Georgia Highway 253 is the only remnant of the possible type locality of *dixianus.* Above this point the water is deep and unsuitable for beetles of lotic habitat preferences; farther downstream the empoundment of the Jim Woodruff Dam has already flooded into the marginal swamps where they have not been cleared,

It was decided in 1953 that Spring Creek near Georgia Highway 253 should be studied intensively as a distinctive type of major habitat in the area to be flooded when the Jim Woodruff Dam is completed. Funds were made available for a study of the aquatic beetles through the Florida State Museum as part of a general survey of the area supported by the U. S. National Park Service.

Spring Creek at this point is a large, deep stream with steep banks. It is largely fed by overflow from the present dam, but receives some water from small seepage springs. The water is clear, and the pH is probably high (over 7.0 as tested with Nitrazine Paper). The banks are composed of a marly limestone and sand, over which small seepage springs trickle into the main channel at several points. The edges are thinly lined with cypress trees which were not included under the contracts for clearing the basin.

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Mr. Sylvester N. Brown and the writer spent the evenings of June 7 and 8 and the morning of June 9 collecting aquatic insects in this area. An attempt was made to explore every recognizably distinct minor habitat represented. The following minor habitats, each with a distinctive assemblage of aquatic beetles, were tentatively recognized along the margin of the stream:

A. Marginal situations exposed to current of stream
  1. ''Hard'' sand beach without vegetation
  2. Silty-sand beach with some emergent vegetation and algae
  3. Limestone exposed at margin with no vegetation except algae
  4. Marl with some vegetation at margin where seepage springs enter main channel
  5. Roots mats around exposed bases of cypress trees

B. Marginal situations partly protected from current of stream
  1. Silt in backwaters behind dense aquatic vegetation (*Ludwigia* sp.)
  2. Silt or silty-sand at outer edge of backwaters, partly protected by emergent vegetation (*Ludwigia* sp.)
  3. Silt or silty-sand areas without vegetation between bases of cypress trees
  4. Mats of roots with algae at water level between bases of cypress trees—mostly along steeper banks

It was obvious that the nature of the bottom, the amount of vegetation, and the degree of exposure to the current of the stream affected the number and kind of aquatic beetles in each of these situations. *Hydroporus dixianus* occurred sparingly in A-2, A-3, A-4, B-2, and B-3; it reached maximum abundance in B-4 which seems to be one of the most natural minor habitat along the stream. *Hydroporus vittatipennis* G. and H. was present in greatest abundance in B-2, but was more abundant than *dixianus* in other situations as well. It was least abundant in A-1, and neither species was taken in B-1 nor in the marginal seepage areas, small temporary pools along the shore, nor in the main stream channel. In A-2, *vittatipennis* outnumbered *dixianus* about 100 to 1; in B-2 about 5 to 1. In B-4, a semi-quantitative sample contained 495 *vittatipennis* and 107 *dixianus*.

In B-4, the floating root mat between the bases of cypress trees, both *vittatipennis* and *dixianus* could be seen coming to the surface and diving among the tangled roots and algae. Both species seemed to be commonest along the inner edge of the mats where sand, marl, or silty sand made a small "beach" beneath the roots. Both could be driven out into the open water only with difficulty, and immediately swam back toward the shore. It was noticed that in nearly all places along the shore small fish were common and would dart inshore toward any insect which was displaced into the deeper water. This suggests that the amount and kind of vegetation affects the abundance of the water beetles only indirectly.

Other beetles associated with the floating root mats were: *Hydroporus clypealis* Sharp, *H. lobatus* Sharp, *Bidessus lacustris* (Say), *Coptotomus interrogatus obscurus* Sharp, *Helochares maculicollis* Mulsant, *Enochrus ochraceus* (Melsh.), and adults and larvae of *Dubiraphai quadrinotata* (Say).

It seems probable that situations similar to B-4 are the characteristic minor habitat of *Hydroporus dixianus* in streams where predators are abundant. It was later found in much the same situation in Spring Creek at U. S. Highway 84 (Decatur County, Georgia). No similar mats could be found along the Apalachicola River at U. S. Highway 90, but several specimens of *dixianus* and *vittatipennis* were found beneath a few roots of willows dangling in the water. *Dixianus* was not found in the Chattahoochee River at Butler's Landing nor at Florida Highway 2 (Ga. 91). Intensive collecting in smaller streams in the area often produced *vittatipennis* but not *dixianus*. *Vittatipennis* was taken in large numbers in the sandy and silty margins of springs (now submerged) along the Flint River in 1953, but no mats similar to those in Spring Creek were noted.

LITERATURE CITED

FALL, H. C. 1917. New Dytiscidae. Jour. New York Ent. Soc., Vol. 25, pp. 173-174.

YOUNG, F. N. 1954. The water beetles of Florida. Univ. of Florida Studies, Biological Science Series, Vol. 5. p. 85.

A DERMESTID IN POISON IVY

Apsectus hispidus (Melsh.) is an additional record to the lists published in this Bulletin by authors interested in insects feeding on poison ivy and its allies, *Toxicodendron* — section of the genus *Rhus*. LeConte and Horn (1883, Smithson. Misc. Coll. 507, p. 143, probably quoting Jayne) state: "*Apsectus* has but one species, found in the Atlantic States; one specimen in my possession was hatched from a tumor on a stem of *Rhus radicans*." I can find no other record in the literature that might help to clarify this observation. — S. D. HICKS, *Systematic Entomology Unit, Entomology Division, Canada Department of Agriculture, Ottawa.*